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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,789	03/22/2004	Hai-Feng Wang	MS1-606USC1	2367

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EXAMINER
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SANDERS, AARON J

ART UNIT	PAPER NUMBER
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2168

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/09/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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lhptoms@leehayes.com

**Office Action Summary**

Application No.

10/806,789

Applicant(s)

WANG ET AL.

Examiner

Aaron J. Sanders

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 37-41 and 72-82 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 37-41 and 72-82 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

This Office action has been issued in response to amendment filed 8 March 2007. Claims 37-41 and 72-82 are pending. Applicant's arguments have been carefully and respectfully considered, and some are persuasive, while others are not. Accordingly, objections and rejections have been removed where arguments were persuasive, but rejections have been maintained where arguments were not persuasive. Accordingly, claims 37-41 and 72-82 are rejected, and this action has been made FINAL, as necessitated by amendment.

### ***Claim Objections***

As per claim 37, the phrase "to determine relevance" is grammatically incorrect. There should be an article before "relevance".

As per claim 78, there should be a semicolon after the limitation "a natural language parser module". In the previous presentation of the claims, the semicolon was present. Further, the phrase "one or more keyword are used" is grammatically incorrect. "Keyword" should be plural.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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Claim 78 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Specifically, there does not appear to be a “keyword module to identify one or more keywords in the search query and to output the keywords”. There is a “keyword parser” that performs this function.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 37-41 and 72-82 are rejected under 35 U.S.C. 102(e) as being anticipated by Warthen, U.S. Pat. 6,584,464.

As per claims 37-41 and 72-82, Warthen teaches:

1-36. (Canceled)

37. A method comprising:

receiving a query (See e.g. col. 1, lines 54-67, “The query input processor is used for accepting an initial user query”);

mapping the query from a query space to a question space to identify associated frequently asked questions, the mapping comprises (See e.g. col. 2, lines 1-11, “a semantic network to obtain a weighted list of well-formed questions representative of possible semantic meanings for the initial user query”):

analyzing a log database to determine relevance of previously stored frequently asked questions to the query (See e.g. col. 4, lines 31-42, “The query is logged to log files 20 for use in further refining information server 50” and Fig. 9); and

ascertaining from the previously stored frequently asked questions the associated frequently asked questions based on the determined relevance (See e.g. col. 4, lines 43-62, “Template questions are questions in a form that allows its context to be easily understood from the question, either because information server 50 has already answered the question to the liking of one or more users, or because an information analyst has input a question-answer template for that question” and Fig. 9);

mapping the associated frequently asked questions from the question space to a template space to identify associated templates (See e.g. col. 3, lines 41-51, “QPE 30 is coupled to dictionary 34 and semantic net snapshot 40 and uses the information obtained from those sources to generate template questions in response to a user-entered question” where QPE means “Query Processing Engine” and the referenced “semantic net” is the claimed “question space”);

mapping the templates from the template space to an answer space to identify associated answers (See e.g. col. 3, lines 41-51, “Template questions are questions that are mapped to answers in question-answer mapping table 42”); and

returning the answers in response to the query (See e.g. col. 4, lines 19-24, “information server 50 uses AE to generate answers to the questions and either presents the user with one or more URL’s of sites that answer the initial question”).

38. A method as recited in claim 37, wherein the mapping from the query space to the question space comprises:

parsing the query to identify at least one associated concept (See e.g. col. 5, lines 26-35, “Another approach to tokenizing is to scan the initial user query and group words into conceptual strings”); and

correlating the concept to one or more frequently asked questions (See e.g. col. 5, lines 26-35, “Tokenizer 150 converts the initial user query into a list of words and provides the list to parser 155” where, see Abstract, “the question processor includes a tokenizer for tokenizing the initial user query into a list of words” and, see Abstract, “The question processor processes the initial user query to identify a set of possible well-formed questions selected from the question database, where a well-formed question is a question in the database that is coupled to at least one answer reference” which correlates the concepts to frequently asked questions).

39. A method as recited in claim 37, wherein the mapping from the question space to the template space comprises cross-indexing from a first table containing question identifications to a second table containing template identifications (See e.g. col. 3, lines 41-51, “a knowledge base 36, which comprises storage for a semantic net snapshot 40 and a question-answer mapping table 42. QPE 30 is coupled to dictionary 34 and semantic net snapshot 40 and uses the information obtained from those sources to generate template questions in response to a user-entered question”).

40. (Previously Presented) A method as recited in claim 39, wherein the mapping from the template space to the answer space comprises cross-indexing from the second table to a third table containing answer identifications (See e.g. col. 3, lines 41-51, "Template questions are questions that are mapped to answers in question-answer mapping table 42").

41. A method as recited in claim 37, further comprising:

presenting the answers to a user for confirmation as to which of the answers represent the user's intentions in the query (See e.g. Fig. 3);

analyzing the query and the answers confirmed by the user (See e.g. col. 5, lines 8-14, "FIG. 3 shows an example display 90 resulting from such a questions display page. From that display 90, the user can select the desired template question and parameters, or can select a button 92 for more answers, resulting in a display such as that shown in FIG. 4"); and

modifying the answers that are returned in response to the query based on information gleaned from the analyzing (See e.g. Figs. 3 and 4).

42-71. (Canceled)

72. A method of parsing a search query, comprising:

segmenting the search query into individual character strings (See e.g. Claim 2, "the user initial query is a text string comprising a sequence of one or more tokens, wherein a token is one or more words that have meaning together");

producing a parse tree from at least one parsable character string of the search query (See e.g. col. 5, lines 45-56, "a user query might use one of the synonyms 'drizzle', 'storming' or 'misting' for raining. By reducing the synonyms to canonical form, the information server does not need to deal with so many questions because, in the above example, four questions collapse

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into one. Normalizer 160 uses a semantic map, a small portion of which is shown in FIG. 6, to perform the canonical reduction” where the semantic map for the referenced “automobile” qualifies as the claimed “tree”); and

generating at least one keyword based at least on one non-parsable character string of the search query (See e.g. col. 5, lines 45-56, “a user query might use one of the synonyms ‘drizzle’, ‘storming’ or ‘misting’ for raining. By reducing the synonyms to canonical form, the information server does not need to deal with so many questions because, in the above example, four questions collapse into one” where the keyword “raining” is generated from the non-parsable character strings “drizzle”, “storming”, and “misting”),

wherein the parse tree and the keyword are used to return answers to the search query (See e.g. Fig. 9, “Internet (end user)” and Figs. 3 and 4).

73. The method of claim 72, further comprising:

conducting keyword searching using the at least one keyword (While keyword searching is well known in the art, see e.g. col. 1, lines 8-19, “initiate a search with a particular set of keywords”, the reference also teaches a form of keyword searching using mapping, see e.g. col. 6, lines 9-14, “FIG. 7 illustrates how a semantic net 200 might be organized to be used to map keywords to questions. Once keywords are mapped to questions, the questions are mapped to answers using question-answer mappings 202”).

74. The method of claim 72, wherein the parse tree represents a collection of concepts related to the search query (See e.g. Fig. 6, where the referenced “automobile” semantic map qualifies as the claimed “tree” and is a collection of concepts related to a search query).



75. The method of claim 74, further comprising matching the parsed concepts to a list of frequently asked questions (See e.g. col. 6, lines 1-8, “Since the list is of instantiated questions that are based on template questions, they will be found in question-answer mapping table 42” where “Template questions are questions that are mapped to answers in question-answer mapping table 42” and as such qualify as “frequently asked questions”).

76. The method of claim 75, further comprising:  
identifying at least one answer associated with the list of frequently asked questions that match the parsed concepts and keywords (See e.g. col. 1, lines 54-67, “The question processor processes the initial user query to identify a set of possible well-formed questions selected from the question database, where a well-formed question is a question in the database that is coupled to at least one answer reference”); and

presenting the at least one answer to a user in a user interface that permits a user to select a desired answer from the one or more answers (See e.g. col. 4, lines 19-24, “Once the user selects a template question, information server 50 uses AE to generate answers to the questions and either presents the user with one or more URL’s of sites that answer the initial question (step 9A) and control passes to an answer display page (step 9B) that presents the user with the answer directly (step 10)”).

77. The method of claim 76, further comprising:  
logging the search query and at least one answer selected by the user in a log database (See e.g. col. 3, lines 27-40, “As shown in FIG. 1(a), actions taken by users in response to prompts on the basic set of pages are logged in log files 20” where there is a “log user question” and a “log user pick”); and

analyzing the log database to derive at least one weighting factor indicating how relevant the frequently asked questions are to the parsed concepts and keywords (See e.g. col. 4, lines 31-42, “The query is logged to log files 20 for use in further refining information server 50” and Claim 9, “removing template questions from the set that have a confidence weight below a predetermined threshold”).

78. A parser for a search engine, comprising:

a segmentation module that segments a search query into one or more individual character strings (See e.g. Claim 2, “the user initial query is a text string comprising a sequence of one or more tokens, wherein a token is one or more words that have meaning together”);

a natural language parser module that produces a parse tree from one or more parsable character strings of the search query (See e.g. col. 5, lines 45-56, “a user query might use one of the synonyms ‘drizzle’, ‘storming’ or ‘misting’ for raining. By reducing the synonyms to canonical form, the information server does not need to deal with so many questions because, in the above example, four questions collapse into one. Normalizer 160 uses a semantic map, a small portion of which is shown in FIG. 6, to perform the canonical reduction” where the semantic map for the referenced “automobile” qualifies as the claimed “tree”), and

a keyword module to identify one or more keywords in the search query and to output the keywords (See e.g. col. 4, lines 31-42, “The initial user query can be a natural language question (e.g., ‘Where can I find information on the sport bicycling?’) and may well include grammatical errors, or a set of keywords, such as ‘info sport bicycling’... When the user presses button 84, the initial user query is sent to information server 50 and client interface 60 passes the query to QPE 30” where keywords have clearly been identified and “output” to QPE),

wherein the parse tree and the one or more keyword are used to return answers to the search query (See e.g. Fig. 9, "Internet (end user)" and Figs. 3 and 4).

79. The parser of claim 78, wherein the parse tree represents a collection of concepts related to the search query (See e.g. Fig. 6, where the referenced "automobile" semantic map qualifies as the claimed "tree" and is a collection of concepts related to a search query).

80. The parser of claim 78, further comprising a search module that matches the parsed concepts to a list of frequently asked questions (See e.g. col. 6, lines 1-8, "Since the list is of instantiated questions that are based on template questions, they will be found in question-answer mapping table 42" where "Template questions are questions that are mapped to answers in question-answer mapping table 42" and as such qualify as "frequently asked questions").

81. The parser of claim 80, wherein the search module:

identifies at least one answer associated with the list of frequently asked questions that match the parsed concepts and keywords (See e.g. col. 1, lines 54-67, "The question processor processes the initial user query to identify a set of possible well-formed questions selected from the question database, where a well-formed question is a question in the database that is coupled to at least one answer reference"); and

presents the at least one answer to a user in a user interface that permits a user to select a desired answer from the one or more answers (See e.g. col. 4, lines 19-24, "Once the user selects a template question, information server 50 uses AE to generate answers to the questions and either presents the user with one or more URL's of sites that answer the initial question (step 9A) and control passes to an answer display page (step 9B) that presents the user with the answer directly (step 10)").

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82. The parser of claim 81, wherein the search module:

logs the search query and at least one answer selected by the user in a log database (See e.g. col. 3, lines 27-40, "As shown in FIG. 1(a), actions taken by users in response to prompts on the basic set of pages are logged in log files 20" where there is a "log user question" and a "log user pick"); and

analyzes the log database to derive at least one weighting factor indicating how relevant the frequently asked questions are to the parsed concepts and keywords(See e.g. col. 4, lines 31-42, "The query is logged to log files 20 for use in further refining information server 50" and Claim 9, "removing template questions from the set that have a confidence weight below a predetermined threshold").

***Response to Arguments***

As per Applicant's arguments that Warthen et al. do not disclose "analyzing a log database to determine relevance of previously stored frequently asked questions to the query" and "ascertaining from the previously stored frequently asked questions the associated frequently asked questions based on the determined relevance" in claim 37, the Examiner respectfully disagrees. The Examiner has cited col. 4, lines 31-42, "The query is logged to log files 20 for use in further refining information server 50", col. 4, lines 43-62, "Template questions are questions in a form that allows its context to be easily understood from the question, either because information server 50 has already answered the question to the liking of one or more users, or because an information analyst has input a question-answer template for that question", and Fig. 9 as disclosing these new claim limitations.

As per Applicant's argument that Warthen et al. do not disclose "segmenting the search query into individual character strings" in claims 72 and 78, the Examiner respectfully disagrees. Applicant states that the claimed "character string" is not equivalent to the referenced "text string" because a character string is not necessarily a word, while a text string is. According to *Microsoft Computer Dictionary, Fifth Edition* (Microsoft, 2002), the definition of a "character string" is "A set of characters treated as a unit and interpreted by a computer as text rather than numbers". Applicant contends that the claimed "character string" can represent a single character, such as a single non-word Chinese character. This interpretation is not supported by the claims, the specification, or the provided definition. Further, Applicant has argued that "character strings" have antecedent basis in the specification because they are "keyword strings"

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and “query strings”, which clearly makes them “text strings” according to Warthen et al. The Examiner accepted this argument and has withdrawn the associated 35 U.S.C. 112 rejection.

Applicant further states that Warthen et al. do not disclose “producing a parse tree from at least one parsable character string of the search query” in claims 72 and 78, but does not provide a reason. The Examiner refers the Applicant to Warthen et al. col. 5, lines 45-56, “a user query might use one of the synonyms ‘drizzle’, ‘storming’ or ‘misting’ for raining. By reducing the synonyms to canonical form, the information server does not need to deal with so many questions because, in the above example, four questions collapse into one. Normalizer 160 uses a semantic map, a small portion of which is shown in FIG. 6, to perform the canonical reduction” and Fig. 6, which shows a semantic net for an automobile. Such a “net” qualifies as a tree because, according to *Microsoft Computer Dictionary, Fifth Edition* (Microsoft, 2002), a tree is “A data structure containing zero or more nodes that are linked together in a hierarchical fashion”.

### ***Conclusion***


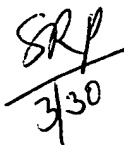
The prior art made of record and not relied upon is considered pertinent to applicant’s disclosure: Hedin et al., U.S. Pat. 5,386,556; Bowman et al., U.S. Pat. 6,006,225; de Hita et al., U.S. Pat. 6,081,774; and Tsourikov et al., U.S. P.A. Pub. 2001/0014852.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron J. Sanders whose telephone number is 571-270-1016. The examiner can normally be reached on M-Th 8:00a-5:00p.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vo Tim can be reached on 571-272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
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